

Wathen (W.H.)

STERILITY.

MANAGEMENT OF THE SECUNDINES.

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STERILITY.*

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Sterility is mentioned in the earliest medical literature, and is often referred to by biblical writers. It is derived from the Greek *στερησις*, implying an incapacity for conception, and is synonymous with infecundity, barrenness, and infertility. Since the happiness of married life often depends on having children, as also the perpetuation of names and families, and the descent of property, and permanence of dynasties and governments, the physician should have a practical knowledge of subjects relating to child-bearing. Sterility is rapidly increasing in all highly civilized countries, and in Great Britain there are about five hundred thousand married women who are childless. But sterility can not be practically understood without a clear idea of the physiology, of reproduction. All the factors concerned in the process of conception must operate in harmony, the woman producing normal ovules and the man normal spermatozoa. These products must unite in or near the Fallopian tubes, and there must be no abnormal condition that will destroy their vitality before or after they come in contact, nor after fixation to the uterine mucous membrane.

As many women potentially fertile are practically sterile, as a result of the prevention of conception and the destruction of unborn life, we will consider briefly some

of the moral obliquities of woman in this connection.

These practices, observed in all stations of society, are sins against nature, morals, religion, and State, and may imperil the independent existence of a people. The moral philosopher can scarcely distinguish between the sin of preventing conception and that of producing abortion; and there is probably nothing about which the moral nature of woman is so depraved as that which concerns her duty in child-bearing. She will determinedly continue in habits destructive of the sanctity of married life, and of the mental and physical health of herself and husband. She is often a respectable member of society, and of church, and will reason intelligently upon other subjects, but is deaf to all arguments upon this. Sacred history is replete with proof, that the evil practice of preventing conception and of causing abortion has been condemned from the earliest history of the world, and the Old and New Testaments are full of evidence of the will of the Creator upon this subject and the punishment of its violation. God's command to our first parents, "Be fruitful and multiply, and replenish the earth," has been repeated to successive generations by divine authority; and the severe reproach of the barren woman in ancient times, caused the Hebrew

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presented by the author -

mother to cry in agony for a son. But the mother of our *modern civilisation* often cries in agony because she is, perchance, compelled to bear a child.

All means of prevention, except a laudable abstinence, is prejudicial to the mental and physical health of husband and wife, and the moral effect of withdrawal before emission is nearly identical with that of masturbation, and the physical disturbance may be greater, as the vasa differentia remain partially filled, producing an irritation that causes a more frequent desire for sexual connection than is healthful. When the semen is not deposited in the vagina, and the connection is imperfect or unfinished, the active congestion of the female pelvic organs finally becomes passive, resulting in engorgement, hyperplasia, displacement, etc., entailing various local and reflex disturbances, or even insanity. Women in *so-called* refined, religious, and cultivated society, being controlled by a desire for social pleasure, and for position and wealth for their children, practice prevention more than women in the obscure walks of life. Their daughters are taught nothing about the anatomy or the physiology of their generative organs, but are trained to abhor offspring, and are told how to avoid becoming pregnant. The higher education or *brain-cramming*, of girls now-a-days, with the absence of exercise and other hygienic measures, and the reading of sensational or love novels, destroy their power to bear well-developed and healthy children, or to supply them with enough nutritious milk for the natural period.

As woman ascends in the scale of education and refinement, child-bearing becomes more difficult. She is more sensitive to pain, and bears children with greater cranial development. Her mode of dress distorts or displaces her thoracic, abdominal and pelvic viscera, and so weakens the abdominal muscles, that the auxiliary forces in parturition are very much impaired.

In the British peerage there is one sterile woman in six and a half marriages, while there is but one sterile woman in ten marriages in the agricultural and seafaring people. In one hundred marriages in the British peerage four hundred and fourteen children were born, while in one hundred marriages, not heiresses, there were born six hundred and twenty-four children.

Sterility may be absolute or relative, congenital or acquired. In absolute or congenital sterility, the ovule is not impreg-

nated, or if impregnated, conception does not follow, the ovule being destroyed in the tubes or uterus; or conception may occur, but the woman aborts before the child is viable. In relative or acquired sterility, the woman has had one or more living children, but in number not according to the duration of married life. A woman may marry successively, two or more men, and have children by only one of them; or a man may marry two or more childless widows, and have children by each of them. This is sterility from incompatibility, these women being potentially fertile. One-child sterility, exists in one out of thirteen marriages. The average time from marriage to the birth of the first child is seventeen months, and between the birth of children nineteen months, and women, upon an average, bear children from twenty-five to thirty-eight years of age—less than fifteen years. As one in thirteen women bear their first child after having been married three years, no woman should be considered sterile until the fourth year of married life.

Sterility may result from mechanical obstruction, from uterine or pelvic diseases, or from constitutional disturbances, or from some defect in the husband. The spermatozoa may be prevented from entering into the uterus by any congenital or acquired defect that interferes with sexual connection, such as imperforate hymen, vaginismus, atresia vulvæ, atresia vaginæ, etc., or by constriction or obliteration by stenoses or flexure of any part of the cervical canal, or by an elongated cervix. The vitality of the spermatozoa may be destroyed by secretions from diseased mucous membranes of the vagina, cervical canal or uterus, but the most poisonous secretions result from glandular cervical endometritis, and from latent gonorrhea. Tumors connected to the uterus, and in the parenchyma of the uterus or any disease of the mucous membrane and walls of the uterus, may not only prevent the entrance of spermatozoa and ovules into the womb, but also prevent or destroy fixation or conception. In the absence of ovaries, there can be no ovules; but enfeebled health, constitutional diseases, profound nervous shock, ovarian incapacity, diseases in or about the ovaries or tubes—such as oophoritis, cystic, sarcomatous, cancerous and inflammatory degeneration of the ovaries—or sapinitis, peritonitis, and cellulitis, may prevent the production of perfect ovules. The entrance of the ovules into the uterus may be interfered with by

displacement, detachment, or absence of the Fallopian tubes; or by any condition that obstructs, contracts, or obliterates their cavity. The so-called spasmodic dysmenorrhea may cause sterility, since of three hundred and thirty-two women absolutely sterile, one hundred and thirty-nine suffered from this trouble. Obesity, confinement, sedentary habits, changes in climate, and inter-breeding are causes of absolute and relative sterility. Absolute sterility, "sterility not absolute," and relative sterility may result from syphilis in husband or wife. Masturbation or over-sexual indulgence may render husband or wife incapable of producing offspring.

In the absence of some positive condition in the woman that will prevent conception, she should not be considered sterile until we know that the semen of the husband contains living and healthy spermatozoa. The general belief that sterility is nearly always due to some defect in the woman is erroneous, and the statistics of Gross show that sterility is found in man on an average of one case in six, and that in eighty-three cases of bilateral epididymitis only eight afterward had living spermatozoa in the semen, due probably to obstruction in the vasa differentia; also that ninety per cent. of sterile women were married to men who have had gonorrhea before or after marriage. A man may be able to secrete spermatozoa, but they are prevented entering the seminal fluid by some congenital or acquired obstruction.

Fertile women usually have pleasure in sexual connection, and may have desire; but women may conceive who have neither desire nor pleasure, while others who have desire and intense pleasure remain sterile.

The inability of the ovaries to produce healthy ovules and the obliteration of the Fallopian tubes are conditions that may be prevented, but can not be remedied, though there are cases of sterility that may be cured. As the ratio of relative sterility and of abortion is less in women who marry several years after puberty, we should advise against too early marriages. Fecundity and fertility are greater in women who have completed their physical and mental development, and as adolescence usually continues until about the age of twenty years, it is best to defer marriage until after that time. If the woman's blood is impoverished or her nervous system and nutritive functions are deranged, and her general health degraded, prescribe out door exercise, nourishing,

and easily digested diet, tonics, constructives and alteratives. In neurasthenic women this treatment may sometimes be preceded by seclusion, massage, electricity, milk diet, etc., which can not be successfully practiced until the patient be separated from her immediate family and home surroundings and influences.

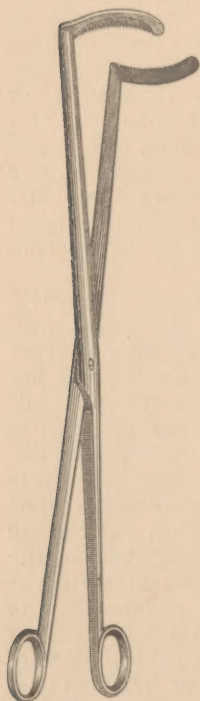
Where syphilis or any constitutional disease causes sterility, treat these conditions *persistently*; if the woman suffers from obesity, reduce her flesh, and if she is constipated, with intestinal indigestion or catarrh, give hydrastin and belladonna as a tonic to the mucous membranes, podophyllin to stimulate the portal circulation, nuxvomica as a tonic to the intestinal muscular fibres, and aloes as a stimulant and tonic to the pelvic vessels to remove passive congestion.

In chronic engorgement of the pelvic organs and hyperplasia of the uterus, with reflex nervous disturbances, or menstrual derangements, the Aletris Cordial and the wine of the American Ash are indicated. Remove conditions that prevent complete or perfect sexual connection, and cure diseases of the generative organs that cause discharges poisonous to the spermatozoa, or that in any way induce sterility. In chronic inflammation of the ovaries, and of the cellular and peritoneal tissues of the pelvis, which interferes with the development of the ovules, or prevents them from entering the uterus, use copious vaginal injections of hot water, and apply counter irritation over the inguinal regions, with croton oil, cantharides, or iodine, to promote absorption of inflammatory products, and use the galvanic current for its electriolitic effect.

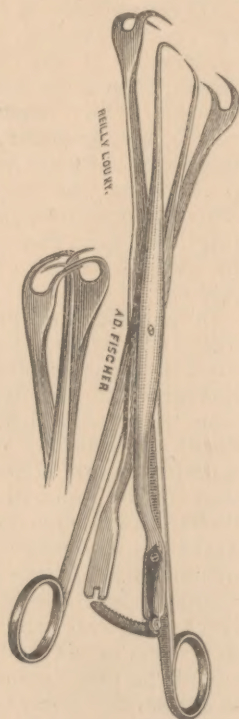
In laceration of the cervix, with intracervical tissue everted and eroded; or in laceration which causes local or reflex nervous irritation, perform trachelorrhaphy; and if in laceration of the perineum, the semen is not retained in the vagina, perineorrhaphy is indicated. Where the retractile force of an abnormally short vagina expels the semen immediately after coitus, the husband should be instructed not to introduce the penis to its full depth, and thus prevent the vagina being put upon the stretch. Vaginal fistules should be closed; and in retroversions and retroflexions of the uterus, success may follow the proper use of a Hodge-shaped or a ring pessary, supplemented by putting the woman in the genu-pectoral position, and forcing up the pelvic viscera by atmospheric pressure.

This assists the pessary in removing passive congestion, and sometimes corrects the displacement. Conception may follow the amputation of about one-quarter of an inch of an elongated or conoid cervix. This operation is seldom indicated, and is considered dangerous; but the complications and objections are greatly lessened by using

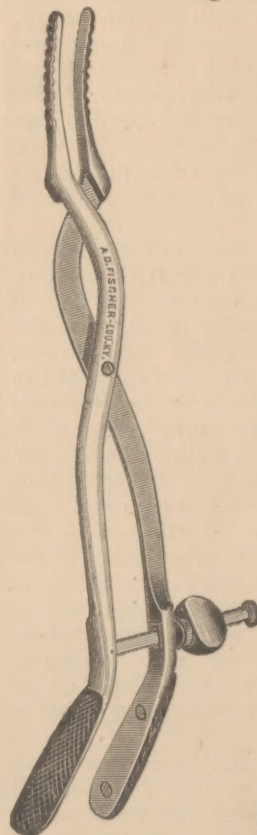
inflammation. Give the patient an injection of morphia and atropia just before the operation, and when she is anæsthetized, dilate the cervix from three-quarters of an inch to one inch and a quarter. I prefer Wathen's dilator, to Goodell's modification of Ellenger's. The superiority



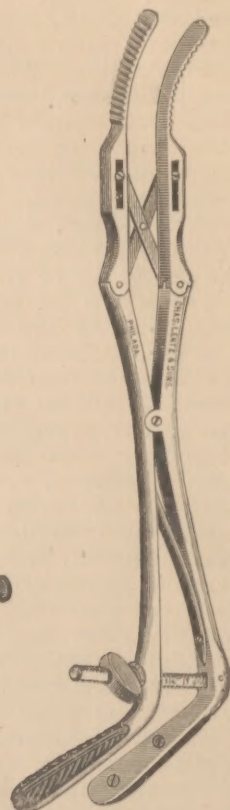
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Wathen's *Serrated Scissors* and his *Compound Tenaculum*. In these operations it is desirable to unite the intracervical and the extracervical mucous membranes, so as to prevent contraction of the os, or the absorption of septic matter. But if the spermatozoa are prevented from entering the uterus by contraction or flexure of the cervical canal, rapid dilatation is the correct treatment; and I enter my protest against incisions and tents, as recommended by many of the recognized authorities. Such treatment is unscientific, is dangerous, and is not successful. Rapid dilatation, if carefully done, is comparatively free from danger, and generally removes the obstruction, and straightens, shortens, and alters the shape of the cervix. The operation should not be performed immediately before or immediately after menstruation, nor while there are evidences of pelvic

claimed for the latter is that the blades being parallel, it dilates all parts of the canal equally. This is true in theory only, for the elasticity or yielding of the blades is greatest at the ends, while the greatest resistance to be overcome is in the upper part of the cervix, so that when the external os is dilated one inch and an eighth, the internal os is dilated not more than an inch. The reverse should be true, for the part that most needs to be acted upon is generally near the uterine body. Wathen's dilator is more powerful, less complicated, and less expensive, and will not slip out of the uterus so easily when expanding; and when it dilates the external os seven-eighths of an inch, the internal os will be open about one inch.

MANAGEMENT OF THE SECUNDINES.*

[From the Journal of the American Medical Association, June 19, 1886.]

One year ago, at the meeting of the American Medical Association at New Orleans, I read a paper in this section on the "Treatment of the Membranes in Abortion and in Labor," but I do not offer an apology for reading another to-day.

Authorities in medicine do not agree as to the management of the third stage of abortion or of labor, and the subject is being extensively discussed in this country and in Europe. At the meeting of the British Medical Association at Belfast, in 1885, it attracted the attention of distinguished physicians of England, who failed to agree in many respects as to the best mode of treatment.

Felsenreich, in the January, 1886, number of the "*Wiener Klinik*," and the great French obstetrician, Professor Pajot, in the February number of the "*Archives de Tocologie*," wrote exhaustive papers on this subject, the former advocating and the latter opposing expectation. Physicians who leave the expulsion of the membranes to nature generally remove the placenta when it is expelled from the uterus, but there are some who refuse to do so when it lies loose in the vagina. There are many who believe expectation is pernicious, and who remove the membranes from the uterus by expression, after the Crede or Dublin fashion, or draw upon the cord or edge of the placenta; or, if the membranes adhere, introduce the fingers or the hand into the uterus and separate and remove them.

Nor is our profession agreed as to the mechanism of the separation of the membranes from the uterus. It is argued that it may result from contraction or reduction of the placental area of the uterus, causing a retro-placental clot at the center or at the periphery of the placenta, which completes the separation, or from a relative inequality in the contractile or retractile powers of the uterus and the placenta and membranes, causing a separation in the trabecular structures connecting the decidua serotina, and decidua vera to the uterine musculature. Neither is there a settled conviction as to whether the separation of the membranes occurs during or after the expulsion of the child. In an excellent paper on the "Anatomy and Relations of the Uterus," etc., in the Edinburgh Medical Journal of 1884,

by Dr. Freeland Barbour, and from the investigations of Dr. Engelman and others it appears conclusive, that when the placenta is well formed the musculature of the uterus is united to a compact layer of the decidua vera, decidua reflexa, decidua serotina, and the chorion by a spongy or trellis-like arrangement of enlarged uterine glands and connective tissue.

The chorion and the amnion are seldom firmly united, though the union becomes more intimate toward the end of pregnancy, but at term the amnion may sometimes be easily dissected from the placenta. In the separation of the membranes the fundi of the glands with ciliated epithelium remain attached to the uterus and develop into new mucous membrane.

The formation of the placenta begins about the end of the second month, and it increases in size until the end of pregnancy, but in the latter months the union between the placenta and uterus becomes less intimate. Until the formation of the placenta the embryo is surrounded by the amnion, the chorion, the decidua reflexa, decidua vera, and decidua serotina. But the decidua vera and the decidua reflexa do not unite for several months after conception, and the amnion and the chorion are not in direct contact until between the end of the third and the end of the fifth month. It is important to remember this, for the fetus may be expelled in an unbroken sack at any time before the sixth month—possibly in the sixth month—the placenta and other membranes being retained. In these cases the amnion has not reached the placenta, or is so loosely attached that it separates easily, the umbilical vessels being torn between the amnion and the placenta without disturbing the integrity of the amniotic sack.

We will divide the subject into the treatment of the third stage in abortions before the beginning of the third month; then the treatment of the third stage in abortions from the end of the second month to the end of the seventh, and, finally, the treatment of the third stage in premature labor and in labor at term.

Nature separates and expels the membranes by contraction and retraction, the placenta presenting at the os and coming away edgewise. This fact can be demon-

* Read to the section on Obstetrics of the American Medical Association at St Louis, May 4, 1886.

strated in nearly every case of labor by grasping the placenta in the hand as it is forced through the neck of the uterus. It is possible that in fundal implantations of the placenta it may sometimes present by its fetal or amniotic surface, with its long diameter in the os; or, pulling on the cord, may so invert the placenta as to cause the same abnormality.

Hemorrhage in the third stage of labor at any period of pregnancy is controlled by physiological contraction and retraction, and by the formation of trombi or fibrinous coagula in the torn ends of the utero-placental vessels, which is favored by contraction of the muscular fasciculi which surround the vessels and contract their caliber.

In abortion after the eighth week, in premature labor and in labor, the membranes should be removed, whether separated or adherent, when they are not expelled within twenty to thirty minutes, and they should be removed sooner if we are apprehensive of hemorrhage, retention of the placenta, or of irregular contractions of the uterus. If, in abortion, the woman shows symptoms of exhaustion or syncope, and bleeding continues, the shock in removing the membranes is not greater than that of tamponing the vagina.

In the statistics of Dr. Weir, of Copenhagen, expectation was followed by the retention of the decidual membranes in 1.78 per cent. of cases, while in expression the per cent. was 2.3. But in all other respects the results favor the immediate removal. Post-partum hemorrhage occurred in expectation in 5.78 per cent. of cases, and in expression the per cent. was 2.3. In expectation manual removal of the placenta was necessary in 1.33 per cent. of cases, and in expression in .64 per cent. Secondary hemorrhage followed expectation in .77 per cent. of cases, and expression in .32 per cent.

Mr. T. M. Watt (Hovingham), in a large experience, has seen no cases of post-partum hemorrhage except in patients treated by expectation.

James P. Nevin, of Ballymoney, in over two hundred midwifery cases, saw but one case of post-partum hemorrhage; that occurred in a patient where a midwife had allowed the placenta to be retained three hours. The woman died.

Prof. Pajot's statistics show that in sixty-eight cases of retained placenta, which were left to nature, sixty resulted fatally, and in one hundred and two similar cases, where the placenta was removed artificially and

timely, only four died, though some of them were in extreme exhaustion from hemorrhage when the operation was done.

So long as a retained placenta is in the uterus or vagina the life of the woman is in jeopardy, and she may at any time be attacked with profuse hemorrhage, septicemia, and pelvic cellular, or peritoneal inflammation. When she has apparently recovered, a placental or fibrinous polypus may form in the uterus, or she may suffer from subinvolution, hyperplasia, etc. Several women in Louisville have died within a few years from septicemia, with pelvic peritoneal and cellular inflammation, or hemorrhage, caused by a retained placenta.

It may be urged that puerperal septicemia is always exogenous in its origin, but we know that a decomposed retained placenta is a prolific cause of the disease, and that its removal or disinfection is the only rational treatment. In abortions before the end of the second month, if hemorrhage ceases, no effort should be made to remove the membranes, unless they protrude into the vagina and can be taken away without introducing the fingers or instruments into the uterus.

These little membranes are generally innocuous, and will be separated and expelled without causing dangerous complications. But if pregnancy has continued until a placenta has formed, expectation should not be practiced. If in abortions after the second month the placenta is not expelled in twenty or thirty minutes, it should be removed, unless the woman is threatened with collapse or syncope from hemorrhage, and when, from the absence of arterial pressure, hemorrhage has stopped. We may then wait until she has recovered from the shock, or until there is decomposition of the membranes or a recurrence of hemorrhage.

If the operation is done without delay the os will usually be dilated or dilatable, and a finger or fingers may be easily introduced into the uterus. There is no instrument that can be substituted for the fingers, though it may sometimes be necessary to use other means to dilate the os. Tents should, if possible, be avoided, and if the os can not be dilated with the fingers Wathen's large dilator may be used. The operation is seldom difficult, and, with the patient anesthetized, any part of or the entire hand may be introduced into the vagina, enabling us to examine all the uterine cavity with the fingers, and to remove every part of the placenta and membranes. Hemorrhage will then stop, and there will probably be no

other untoward symptom. Of course our hands should be thoroughly disinfected, but this should be done in every case of delivery. In premature labor and in labor at term the placenta is more easily separated than in the earlier months, and is less frequently retained. I fail to recognize a single fact to justify expectation in the management of the third stage of labor in the latter months of pregnancy, and, while I do not believe it usually necessary to supplement or supplant nature in an effort to remove the membranes immediately after the child is born, I do not think the placenta should be left in the uterus more than twenty to thirty minutes, and it should be removed from the vagina immediately.

The membranes can generally be removed by judicious expression during labor pains, but if this fail we may assist expression by gently drawing upon the edge of the folded placenta. With a reasonable degree of care this treatment would neither cause septicæmia nor invert the uterus, and such accidents could only result from criminal ignorance or carelessness in the physician. Unless uterine inertia follows the birth of the child, there is no necessity for attempting expression until the uterus contracts in an effort to expel the placenta. We should then follow the Crede method, being careful to express only during a contraction. But it is always safe treatment to keep a hand over the uterus to see that it does not relax, and to encourage it to contract by kneading, massage, or expression, if it fail to do so otherwise.

Crede reports that he removes the membranes in four and one-half minutes after the child is born with universally gratifying results, and Garrigues has also removed them in from ten to twenty minutes in four hundred or five hundred cases with excellent results. But it is better to give more time for the membranes to separate, and for coagula to form in the mouths of the vessels. A little delay will do no harm, and will be less frequently followed by retention of decidual shreds. If the placenta can not be separated by expression, then it should be separated carefully by a hand introduced into the uterus. If the membranes are imprisoned in the uterus by contraction of the circular fibers of its lower segment or in its entirety, the neck should be dilated with the fingers, and the placenta separated and removed. We should always have a hypodermic syringe charged with ergot for any emergency, but I do not believe that ergot

should be given until the membranes are expelled.

DISCUSSION.

Dr. Fuller, of Maine, after an experience of thirty-eight years, was in favor of prompt placental delivery, and congratulated the author of the paper upon his method of managing the secundines, and hoped that he would continue in his opposition to expectation. He is usually able to express the placenta in cases of labor at term within five minutes after the expulsion of the child.

In abortions the membranes can not be gotten away so readily, but they should be removed as soon as possible.

Dr. Willis P. King, of Sedalia, Missouri, had seen 719 cases of labor at term, and an unusually large number of abortions. He removed the placenta promptly both in labor and in abortion; at term by Crede's method of expression, and in abortion, if the os is contracted, he practiced rapid dilatation with the finger or steel dilators. When the finger, hand, or instruments were introduced into the uterus, and in lacerations of the genital tract, he used hot intra-uterine injections of a solution of corrosive sublimate, 1:4000. He had not seen a case of septic infection for several years.

Dr. C. R. Reed, of Middleport, Ohio, believed in immediate delivery of the placenta. In nineteen cases out of twenty he was able to deliver the placenta by Crede's method and traction within five minutes after the expulsion of the child.

Dr. W. W. Potter, of Buffalo, New York, said that the terms uterine massage and Crede's method were sometimes employed as synonyms. Suprapubic pressure was not Crede's method. Crede, in 1853, said that four fingers must be forced behind the *corpus uteri*, the thumb over the anterior wall, and the placenta must be expressed just as the stone of a cherry is pinched out. He did not believe in traction on the cord, but when the traction is slight no harm usually results. He called attention to numerous sequelæ of abortion, and to the importance of effecting early evacuation of the *cavum uteri*.

Dr. John Morris, of Baltimore, advised the early removal of the placenta. He never allowed the placenta to remain longer than twenty minutes after the birth of the child. He distinguished between abortions the result of natural processes and those induced by medicines and instruments. In induced abortions it is necessary to practice rigid antisepsis, and the prognosis is less favora-

ble. In so-called "natural" abortion antiseptics are seldom required, and intra-uterine irrigation is certainly not indicated. He never gave ergot before the uterine cavity was emptied except in case of "bleeders."

Dr. French, of Minneapolis, desired to enter a protest against the indiscriminate use of intra-uterine irrigation. He had re-

cently observed a fatal termination of a case in which the uterine cavity had been irrigated. He now swabs out the *cavum uteri* when indicated with a mixture of iodoform, carbolic acid, and glycerine. He had seen bad results follow vaginal irrigation with a corrosive sublimate solution, 1:2000. Bichloride of mercury should be employed with extreme caution—if at all.

Compliments of

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PRACTICE LIMITED TO
DISEASES OF WOMEN
—AND—
CHILDREN.